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Agricultural Memorandum No 736

Hypomagnesaemia at Tavistock

L P Smith

Dr J C MacKeller, veterinary surgeon at Tavistock has asked for comments on 7 years of monthly data of the incidence of "grass staggers". These data showed a high incidence in November and December, during which months over a quarter of the annual total were reported.

Examination of the Tavistock Met. data showed that the best statistical fit was to be found by using

For November: mean monthly temperature (T_N) and number of ground frosts (f)
For December: mean monthly temperature (T_D) and number of cases of the disease in the previous April and May (N_{AM}).

Then cases in November $N_N = 1.74N + 17.4T_N - 136.2$
in December $N_D = 1.19T_D + 1.29N_{AM} - 18.3$

In each case the total correlation was 0.99 and the partials 0.99 and 0.98, 0.89 and 0.99, respectively.

Date	N_N	F	T_N	N_D	T_D	N_{AM}
1968	19	10	7.9	17	5.3	23
1969	6	21	6.0	1	7.3	11
1970	22	4	8.7	13	7.4	19
1971	5	14	6.8	4	9.4	11
1972	18	22	6.7	12	9.9	16
1973	19	4	8.5	14	9.4	20
1974	24	13	7.9	12	10.2	16

The effect of N_{AM} in December suggests that conserved fodder is being consumed of the same quality that caused the disease in April and May. No trace of this influence can be found in November.

Any comments or suggestions on this paper should be referred to the author.

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Agricultural Memorandum No 736A

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Amendment to Agricultural Memorandum No 736 "Hypomagnesaemia at Tavistock".

Para 4: The December equation should read

$$N_D = 1.05\ T_D + 1.24\ N_{AM} - 16.6$$

Para 5: Should read "In each case the multiple correlation coefficient was 0.99 and the partial correlations were 0.98 on F, 0.99 on T_N, 0.91 on T_D and 0.99 on N_{AM}.

Table: The values tabulated for T_D should read -

	T_D
1968	5.3
69	3.9
70	4.7
71	7.1
72	7.2
73	6.1
74	8.3

Any comments or suggestion on this paper should be referred to the author.

Meteorological Office
Bracknell

December 1976

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